

**DEPARTMENT OF PHYSICS AND ASTRONOMY**

<b>PHY118</b>	<b>Professional Skills in Physics</b>
<b>Academic Yr</b>	<b>10 Credits</b>
<b>Staff contact</b>	<b>Dr Mark Quinn - <a href="mailto:m.quinn@sheffield.ac.uk">m.quinn@sheffield.ac.uk</a> Dr Ashley Cadby - <a href="mailto:a.cadby@sheffield.ac.uk">a.cadby@sheffield.ac.uk</a> Dr Paul Smith - <a href="mailto:p.j.smith@sheffield.ac.uk">p.j.smith@sheffield.ac.uk</a></b>

Outline Description	Professional skills in physics is a laboratory-based module which aims to equip the student with experimental physics and problem solving skills that should allow them to progress to advanced experimental physics in levels 2, 3 and 4. A range of activities will be undertaken by students including basic physics experiments and computer programming tasks, problem solving exercises and workshops and presentation of results in both written and oral forms.
Restrictions	<b>Core:</b> CHMU03 BSc Physical Chemistry, CHMU08 MPhys Physical Chemistry, PHYU14 BSc Physics & Philosophy
Prerequisites	None
Co requisites	None
Approx Time allocation (hours)	Lectures 15, Prob Solving 10, Labs 25, Independent 30 . Homework 20
Assessment (%)	Essay/coursework 60% , Lab work 40% ,
Aims	The aim of this unit is to provide a fundamental understanding of major aspects of experimental physics and problem solving methods used in physics.
Outcomes	At the end of this unit, a student will be able: <ul style="list-style-type: none"> <li>·</li> <li>· to maintain a professional quality laboratory diary;</li> <li>· to analyse and interpret experimental results;</li> <li>· to present their results in both writing and orally;</li> <li>· to develop and demonstrate their problem solving skills within the physics environment;</li> <li>· To complete basic computer programming tasks;</li> <li>· To work independently and as part of a group</li> </ul>
Recommended Books	Experimental Methods, Les Kirkup (Wiley).
Syllabus	<b>Additional Syllabus: Positional Astronomy</b> This course is designed to equip you with the knowledge and skills needed to plan and carry out astronomical observations. To do this, you will need

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	<ul style="list-style-type: none"> <li>· an understanding of how and why stars and the Sun appear to move in the night sky, and how this depends on your location on the Earth;</li> <li>· a working knowledge of the definitions and use of the principal astronomical coordinate systems;</li> <li>· an understanding of the principles of spherical trigonometry;</li> <li>· a working knowledge of the definition and use of solar and sidereal time and their dependence on the location of the observer.</li> </ul> <p>The <i>Positional Astronomy</i> course is designed to deliver this. It is a workshop course, combining lectures with computer exercises, so that you both learn the material and develop skills in applying your new knowledge to solve problems. The computer packages used are fairly self-explanatory, and you do not need any prior experience or knowledge of computer programming. The course culminates in a “driving test” qualifying you to use <i>ROSA</i>, the department’s remote-operated telescope. You will then put your skills into practice by carrying out an observational practical exercise using <i>ROSA</i>.</p>
Academic Notes	